CHAPTER 3

Windows 10 for Phone and Other Devices

If you remember the days when you had a different operating system on every device, and when one didn't talk to any other, then you'll probably also remember how frustrating it could be. Whether you had to print out all your contacts and manually enter them into a new phone, or you did not have access to recent emails on a laptop because they'd already been downloaded using POP to your main PC, the "golden age" of computing could be a pain.

Fortunately, things are now very different, but perhaps not for the better. Technology has moved in a direction that some people feel has left us with fewer freedoms. Often I hear people talk of the tech company "lock-in." Whether this is with Apple, Google, or Microsoft, they all have operating systems and ecosystems of online services intended to get to you stay exclusively with them.

For many people the lock-in can be annoying, especially if you get bored of one smartphone system and fancy moving, for example, from Android to the new iPhone. Suddenly you have to buy all your apps again, and perhaps even abandon the online services you've been using.

I don't mind the lock in, for several reasons. Chief among these is that the integration between Microsoft's services has always been excellent, and the quality of those services is still higher on average than that of services offered by Google and Apple.

Take OneDrive and Office 365, for example. They're embedded deeply in all Microsoft products, and in addition to being useful services in their own right, they act as bridges between different Microsoft devices and platforms, such as PCs, tablets, and phones.

With Windows 10, Microsoft is taking this integration to the next level. They can do this because the same core operating system will be running on not just all of their own devices, such as PCs, tablets, phones, and the Xbox, but also extending outwards to Internet of Things (IoT) devices such as the Raspberry Pi.

In this chapter then, we'll look at the ecosystem outside of the PC to see where you will find Windows 10 and what its inclusion on different devices will mean for usability, accessibility, and productivity.

Windows 10 for Phone

I mentioned earlier that there were several reasons why I didn't mind the Microsoft lock-in, and Windows Phone is definitely up there as a top reason. I'm not an app guy and have always viewed Apple and Google's approach of filling the front screen of their devices with icons as just a way to push you into buying apps you don't need.

Google's widgets are a valuable step forward, but the Live Tiles we saw first with Windows Phone are just fantastic. Many of you will agree, I'm sure, that being able to check what that latest email or Facebook post is, or look at the current weather or news with just a glance is a great time (and battery) saver.

You'll be pleased to hear that Microsoft hasn't fiddled with any of this functionality in Windows 10 for Phone, and indeed they may still be expanding it.

You might have seen a (quickly withdrawn) video from Microsoft Research in the Far East in 2014 that showed Live Tiles that could be expanded into a full app, right on the Windows Start Screen. This enabled people to be able to open, for instance, a calculator quickly and without having to wait to load the app. I sincerely hope that Microsoft builds this functionality into Windows 10 and Windows 10 for Phone.

What Microsoft has done, however, is take all of the strengths of Windows Phone and expanded on them. You may already be familiar with some of this functionality if you've been using the latest Windows Phone 8.1 builds, which include Cortana. Cortana in Windows 10 for Phone works exactly as it does on the desktop, as I detailed in Chapter 2.

The Notification Center

Windows Phone 8.1 introduced us to a notification center on a Windows device for the first time. It was a central store for all messages and information from the OS, your email, messaging features, and installed apps. In addition, the Notification Center allowed you to pin a number of quick-action buttons to the top of your screen, such as Wi-Fi on/off and the Quiet Hours feature, which silences notifications and audio and can optionally send a text message to anyone who called or texted you to tell them you were busy.

Windows 10 for Phone expands notifications and the Notification Center in several ways. The first and perhaps the most prominent way is that you can now pin many more quick-action buttons to the top of the center (see Figure 3-1).

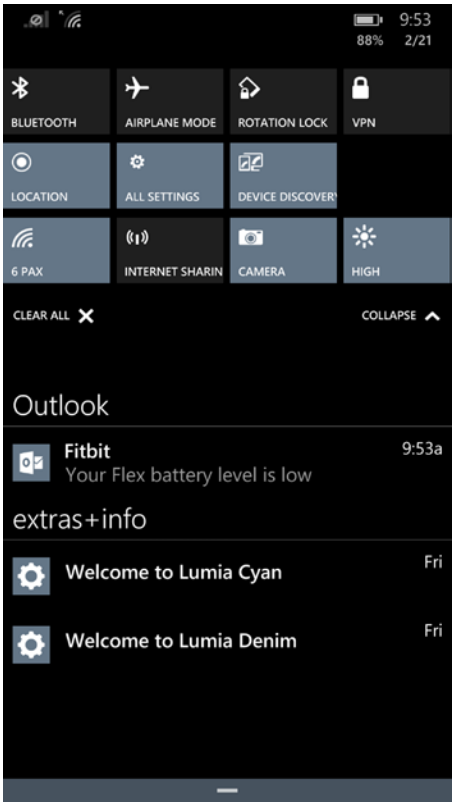

Figure 3-1. *You can pin more quick-action buttons to the Notification Center in Windows 10 for Phones*

Depending on the size of the screen on your existing Windows Phone, the number of pinable icons can be limited. On my own Lumia 1020 I can only have four, and would like extras.

You will only see the top row of buttons, perhaps your most commonly used ones, when opening the Notification Center, but an *expand/collapse* link to the bottom right of the icons will allow you to display all the pinned quick-action buttons.

This expand/collapse functionality has been included in other aspects of notifications too. All of the notifications that appear can be interacted with in several new ways, as follows.

- You can **expand** notifications to read more details about them, which is useful for a weather alert or email that is truncated by being limited to one line on your phone's screen.
- Some notifications will have **interaction** buttons that allow you to perform actions without having to first enter the app to do so, such as dismissing an alarm or replying to a text message. This functionality will require in-app support so it won't be universally available.
- Just as you could swipe a toast notification away in Windows 8 and 8.1, Windows 10 for Phone allows you to quickly **swipe right to clear a notification**. It's also expected that a two-finger swipe will let you clear all your notifications in one action.

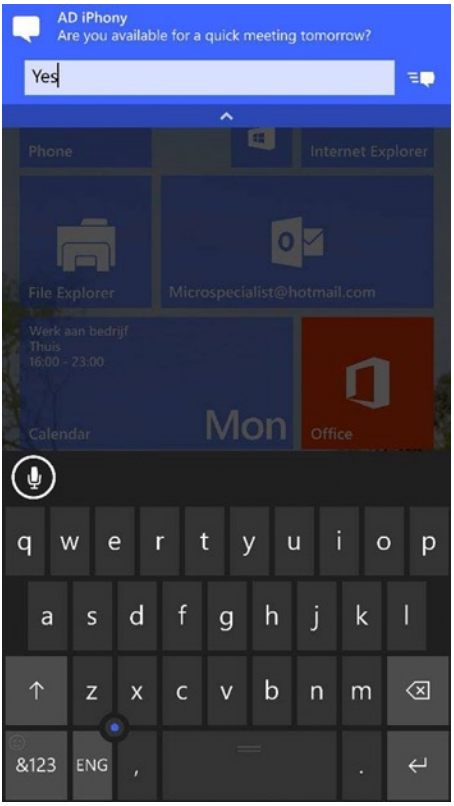

Figure 3-2. *You can interact with toasts without having to open the app*

When toast notifications appear on your screen, perhaps to alert you to a new incoming message, email, or Facebook post, you can interact with these messages directly from within the toast. A good example of this is being able to read a text message in the toast and reply, there and then, without first having to enter the messaging app. Other toasts will include buttons and other controls that allow you to interact with the toast or dismiss it, such as with an alarm.

■ **Note** Another useful feature with notifications is that, should you turn your phone off, it'll give you an "*in case you forgot*" message with any upcoming appointments or reminders you have set.

Enhanced Keyboard

The on-screen keyboard in Windows 8.1 and Windows Phone has always had some extremely useful and often hidden functionality, such being able to tap and hold on a letter to display its foreign equivalents, including accented characters. However, the on-screen keyboard in Windows 10 has been greatly enhanced and expanded. For example, on desktop, laptop, and tablet PCs it now features predictive text, allowing you to create messages more quickly, as it intelligently predicts what word you're likely to type next.

The on-screen keyboard in Windows 10 for Phones has been enhanced in two significant ways. First, you can grab the keyboard and drag it to the left or right side of the screen. This will be useful for people using larger-screened phones or phablets.

Additionally, a new microphone icon is now displayed above the keyboard, allowing you to dictate what you want to write instead of typing it. Microsoft has made great strides with their voice recognition technology in recent years and has further refined its abilities in Windows 10 for Phone. For example, this new text-to-speech feature allows you to dictate into virtually any text field in the OS or app.

Enhancements to grammar and spelling algorithms now mean that your smartphone can fill in the correct grammar for your particular usage automatically and tell when you mean to use a particular homophone, such as saying "too" instead of "two."

Finally, and this will be great news to all fans of Lenovo's laptops, the Windows 10 for Phone keyboard includes a cursor "nipple" (see Figure 3-3).

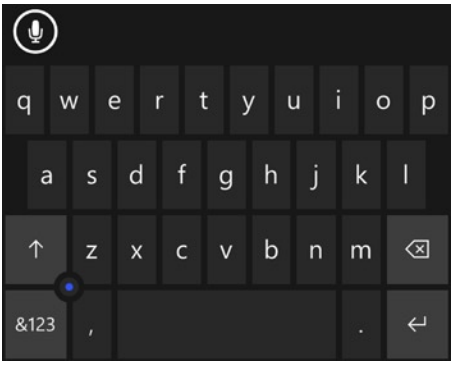

Figure 3-3. *The phone keyboard now includes a Lenovo-style cursor nipple*

One of the biggest criticisms with the Windows Phone keyboard has been the problems you face trying to change a specific character in the middle of a word, with the whole word often having to be retyped. This new nipple, which can be seen in the bottom left corner of the keyboard, now acts as a draggable cursor, enabling you to move in four directions to wherever you need to be in your text.

Customization

One of the biggest strengths of the Windows operating system, and a primary reason for its success over the last thirty years, is that it's always been the most configurable and customizable operating system available. No matter what it is you want to change in Windows, from skinning the OS to tweaking Registry keys, it has been possible to achieve, and entire third-party industries have grown up to support this.

Customization was very late to come to Windows Phone, however, and there were good reasons for it. A smartphone OS isn't the same as one on the desktop, where you can save Restore Points or a factory backup image, or just boot from a DVD and reinstall everything from scratch.

Smartphones have very limited storage and connection potential, but perhaps more critically, they tap directly into our bank accounts and other payment systems in a way our PCs likely never will. On your smartphone you can quickly run up enormous bills if you create an ecosystem in which malware can surreptitiously send text messages or trick you into making international phone calls. Consequently, permitting apps to change low-level OS settings and features on a smartphone can create a security risk far more easily, and possibly much more seriously, than on a desktop PC.

Inevitably however, customization options began to appear, and by the time of Windows 8.1 we had Live Tile backgrounds and new color schemes.

Windows 10 for Phones naturally expands this functionality, primarily providing the ability to at last set a full wallpaper for your Start screen. This sits in the background instead of inside the tiles (see Figure 3-4).

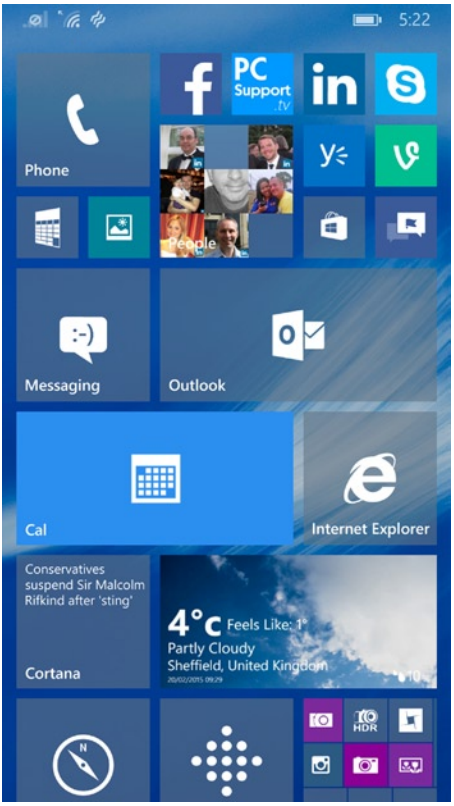

Figure 3-4. *You can set full-background wallpapers in Windows 10 for Phone*

Additionally, Tiles can now be transparent so that the wallpaper will partially show through. Should you prefer, on-Live Tile wallpaper options also exist that will place the wallpaper image on the Tiles themselves, rather than on the background.

None of this means we can change the typefaces or other advanced customization features of our handsets, but they're a very welcome step in the right direction.

Better Organized Settings

If you've used a Windows Phone up to this point then you'll know that the phone Settings were a jumbled mess. This wasn't helped by third-party companies such as Nokia being able to inject their own additional options in the main Settings menu. With Windows 10 for Phone this has been rationalized and brought in sync with the new Settings panel on PCs and tablets (see Figure 3-5).

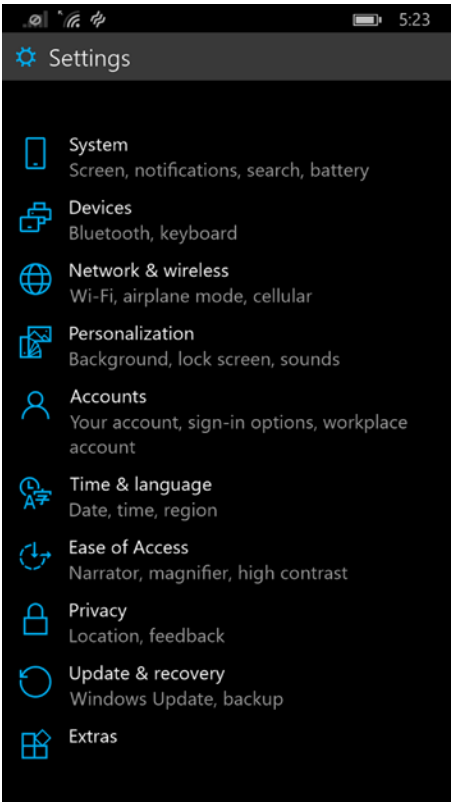

Figure 3-5. *Settings in Windows 10 for Phone are much improved*

The more complicated smartphone operating systems get, the more difficult it can be to find what you need. A new category-based approach helps you quickly find the settings on the phone that you're looking for. This new view helps rationalize the OS and generally improves the whole configuration experience.

Additional Improvements in Windows 10 for Phone

While not all of the final features and enhancements in Windows 10 for Phone have been revealed, there are already some compelling improvements and additions. I'll detail them here in no particular order, except for the one I feel is most welcome.

Like many smartphone users, I use the Alarms app a lot, almost every day, in fact, which must make it my most-used app after email, messaging, and Facebook. I was delighted to see that it's been enhanced in Windows 10 for Phone with the addition of a timer, stopwatch, and world clock (see Figure 3-6).

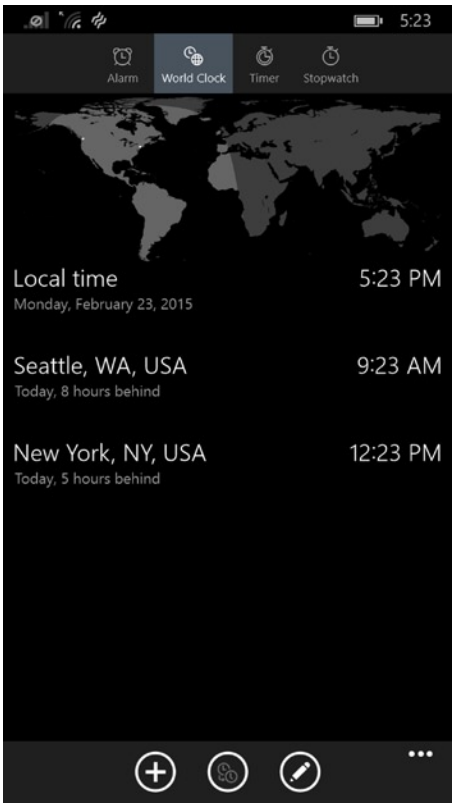

Figure 3-6. *The Alarms app now features timers and a world clock*

This world clock isn't like any basic world clock app either, as genuine thought has gone into its implementation. As well as being able to see what the time is in Seattle and New York (where Microsoft and my publishers can be found), you can now compare different times for different cities around the world. This might sound like only a moderately useful feature, but it's amazing how difficult the information can be to get when you *do* need it.

When Windows Phone first launched, we could store files on our phones and open them using the built-in Office and PDF apps. However, it took some time for an actual File Explorer app to be released by Microsoft, and then it was a downloadable extra.

Now, a full File Explorer has been included in Windows 10 for Phones, allowing us to better organize our collections of files, documents, music, videos, and photos (see Figure 3-7).

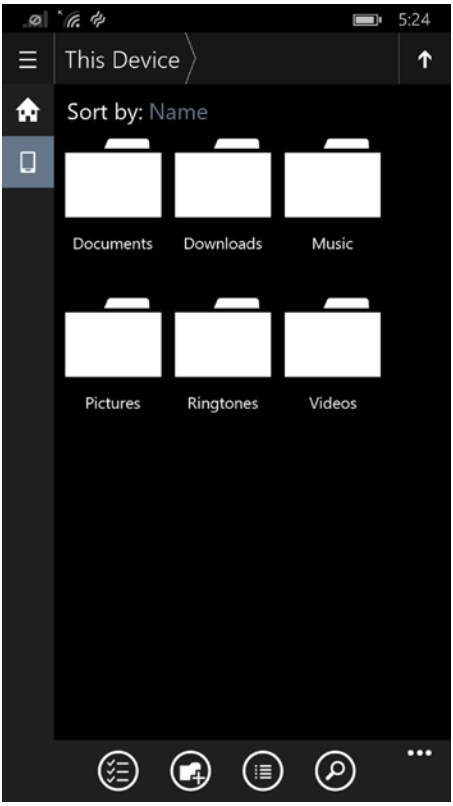

Figure 3-7. *The File Explorer app is now part of the OS*

The Calculator app has been enhanced with the tools we need while we're on the move, such as full scientific and programmer modes, and every form of conversion calculation you can think of, except for currencies (see Figure 3-8).

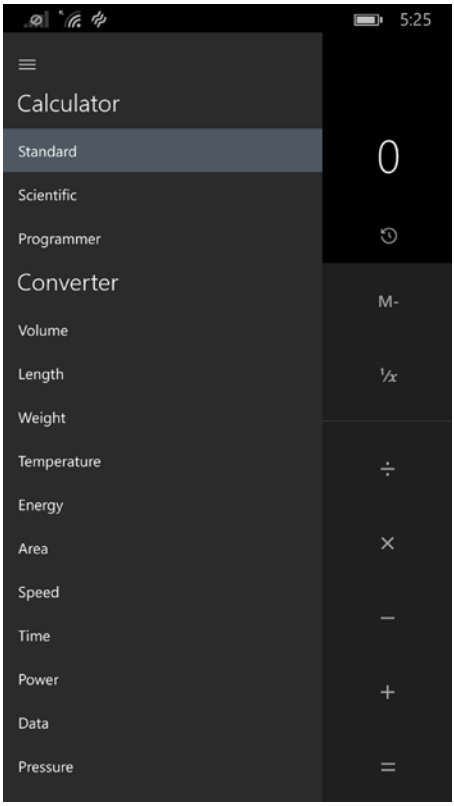

Figure 3-8. *The enhanced Calculator app*

There's also a new Sound Recorder app, which many will find useful for note-taking or in meetings and lectures.

Microsoft's headline app so far, however, is Photos. Just like its desktop cousin, it's been enhanced to automatically aggregate all the photos you have stored on your various Windows 10 devices and cloud services, such as OneDrive.

Also like the Windows 10 desktop app, photos can be grouped and displayed in different ways, such as by date, location, or the people included (see Figure 3-9).

Figure 3-9. *The new Photos app*

These features are intelligent and, again like the desktop app, can help you find all your photos taken in a specific location, say, Austria, by using metadata such as date taken and geotagging. It can also use face recognition to find all the photos of your friend Phil.

So What's in It for Businesses?

All of the new and enhanced features in Windows 10 for Phone that I've detailed so far are aimed at making it easier to use and configure the OS for consumers, but businesses are certainly not left out. This is Windows 10, and that means, for the first time, every security and manageability feature that's available in the desktop version of the OS is also available here. There might not be a Group Policy app, but full management of Windows 10 phones is available in Windows Server.

Crucially, all of the new and enhanced security features in Windows 10 will be available on phones, and Bring Your Own Device (BYOD) manageability is included too. You can find out about all the new and enhanced business and security features available for businesses in Windows 10 when you read chapters 5 and 6.

Xbox One

When Microsoft said that Windows 10 would be "one OS for every device in your life," they weren't kidding. I'll talk later in this chapter about the Internet of Things, but one of the devices running Windows 10 that you're likely to have is an Xbox One games console.

It makes sense for Microsoft to port Windows 10 to the Xbox One console (it won't be ported to the Xbox 360), if only for reasons of security and manageability. It's much cheaper for any company to fix security and stability flaws on a single OS platform than across many, especially when they have so much in common to begin with.

We've not yet seen the new Xbox environment for Windows 10 in any detail, but everything you've read here about an integrated Settings environment and universal apps will apply. Universal apps are a good case in point, as they'll be able to run on your Xbox in the same way they run on your phone, PC, and tablet. This offers new opportunities for gaming in Windows 10. You might, for example, have a really great game on your Windows Phone that has you utterly hooked. If you're lucky it'll also be available for your desktop. With Universal Apps, it's almost certain that you'll be able to play the same game on your Xbox when you get home.

Integration doesn't stop there, however. The new Xbox Live apps for your desktop, tablet, and phone will allow you to manage your player profile, achievements, and more from those devices (see Figure 3-10).

Figure 3-10. *Xbox One will run Windows 10*

Perhaps the coolest feature will be that you can stream Xbox One games from the console to any Windows 10 PC or tablet, meaning you can continue to play your games when the TV is in use for "Better Call Saul" or "Game of Thrones."

Another major benefit of having Windows 10 running on the Xbox One is that you will be able to play games online with people who are using a Windows 10 PC, laptop, or tablet. Not all players will need an Xbox One console to participate. All you will need is the game available for the different devices.

The inclusion of Microsoft's new graphics rendering engine, DirectX 12, will result in ever-more realistic and smooth gameplay, and Windows 10 will allow you to capture image and video clips of your gaming in real time as you play and share them with online communities.

It's probably in gaming that Windows 10 sees some of its greatest potential, especially with Internet of Things devices, which I'll talk about shortly. Gaming has always been incredibly popular on Windows PCs, and Windows 10 looks certain to take this popularity to the next level.

The Internet of Things

First, I should explain what the Internet of Things (IoT) is, as you may have heard of it but not be completely familiar with the concept. Basically, the Internet of Things is an idea whereby all of our home and work devices and appliances are connected to the Internet and have improved functionality as a result.

Some of this has already appeared, with solar power systems able to communicate with you remotely via an app, a refrigerator able to do whatever it is an Internet fridge might need to do (even I get confused by that one), a microwave or oven that can download recipes and cooking times, or a bathroom mirror that can display your day's appointments.

IoT devices even extend outside of the home; cars can be Internet-connected to read us emails as they arrive, display appointment details, provide live route-planning, and to allow us to make a quick video call over Skype.

Some IoT devices have existed in the workplace for a while, such as photocopiers and printers that can send emails and save documents to cloud backup services. The Microsoft Surface Hub, which I detail in Chapter 5, is an IoT PC.

Lastly, if you're using an Internet-connected smart TV, you are using an IoT device. They are quite literally everywhere!

Microsoft is determined that many more IoT devices will run Windows 10 in years to come, but how will this benefit us, if at all?

For myself, I rather like the idea of the bathroom mirror or refrigerator informing me of upcoming appointments or newly-arrived emails while I'm half-asleep early in the morning. I think that a touch-screen desk that instantly has access to my OneDrive would be extremely useful, especially when I need to quickly pull up an important file, and I believe the educational possibilities of IoT devices running Windows 10 are not to be underestimated.

Raspberry Pi 2

This brings me rather neatly to the subject of the Raspberry Pi (see Figure 3-11). For those of you who are unfamiliar with it, this is an inexpensive, bare-bones PC that was designed to help students learn how to write computer code.

Figure 3-11. *The Raspberry Pi 2 runs Windows 10*

The first Raspberry Pi was released to great fanfare in 2012. It featured a low-cost ARM processor, 256MB of memory, and storage only available through the addition of an SD memory card.

As an educational tool, the Raspberry Pi is highly effective, as it is able to run a wide range of operating systems and support many programming languages. It could connect to USB devices, a keyboard, mouse, and monitor, and even to the Internet.

This year the improved Raspberry Pi 2 was launched, and the enormous developer community for the platform simply demanded support for Windows. Microsoft was all too happy to oblige, and they announced at the beginning of February 2015 not only that Windows 10 would run on the Raspberry Pi 2, but also that the OS would be completely free to the development community through the Windows Developer Program for IoT. The version of Windows available for the Raspberry Pi 2 will likely be very similar to the 8-inch or smaller devices edition. This means there will be no desktop version, for reasons of licensing.

Being able to purchase a small PC for just $35 and write and run Windows 10 apps on it will be a hugely exciting prospect for the developer and educational communities alike, and it's definitely something to look forward to.

Summary

One operating system, for every device in your life, was what Microsoft said when they first announced Windows 10 to the world, and 2015 is, quite frankly, only the start of it. PCs, laptops, Ultrabooks, tablets, the Xbox One, phones, and the Raspberry Pi 2 are where things will begin, but let's not forget what's already been announced, such as the HoloLens, which I will talk about in Chapter 4, and the Surface Hub.

The potential of Windows 10 to be a global OS platform doesn't stop there, however. Your home automation or heating system could soon be powered by Windows 10, as might your car or even the kettle. The possibilities only end at the limits of the imagination of software and device developers.

So far in this book I've detailed the new and cool features in the Windows 10 OS, but that's only half the story. In the next chapter we'll begin to look at how this all fits together into a cohesive and more productive experience for users and businesses alike. Now, where's my phone? I need to tell the kettle to be boiled for when I get home.